

A HYBRID FREQUENCY-TIME DOMAIN EQUALIZER

ABSTRACT OF THE DISCLOSURE

5 A channel decoder employs a hybrid frequency-time
domain equalizer for effectively combining a frequency
domain equalizer with a time domain equalizer to achieve
superior static and dynamic multi-path performance compared
to conventional decision feedback equalizers. A frequency
10 domain equalizer structure is included within the forward
path of a time domain, decision feedback equalizer, with
both the frequency domain and time domain portions
employing a common error vector. Updates to the taps
(frequency bins) may be adapted individually, or fully
15 within the frequency domain without altering the feedback
filter. Improved performance, including performance for
noisy channels with deep notches, is achieved, and the
frequency domain equalizer portion is relieved from
equalizing minimum phase zeros of the channel.